Cutaneous Leishmaniasis in OIF/OEF Soldiers

Leishmaniasis Working Group

July 2004

Introduction

- Leishmaniasis is a parasitic disease transmitted by the bite of sand flies.
- Found in parts of at least 88 countries including the Middle East
- Three main forms of leishmaniasis
  - **Cutaneous**: involving the skin at the site of a sandfly bite
  - **Visceral**: involving liver, spleen, and bone marrow
  - **Mucosal**: involving mucous membranes of the mouth and nose after spread from a nearby cutaneous lesion (very rare)
- Different species of *Leishmania* cause different forms of disease

Cutaneous Leishmaniasis (CL)

- In Iraq & Kuwait, *L. major is* the most common species
  - *L. major* causes skin infection
- Approx. 1.5 million new cases of cutaneous leishmaniasis (CL) in the world each year
- >500 cases of CL from *L. major* from OIF by Spring 2004! (only few cases from OEF)

Endemic Areas for Leishmaniasis

BMJ

Cutaneous Leishmaniasis (CL)

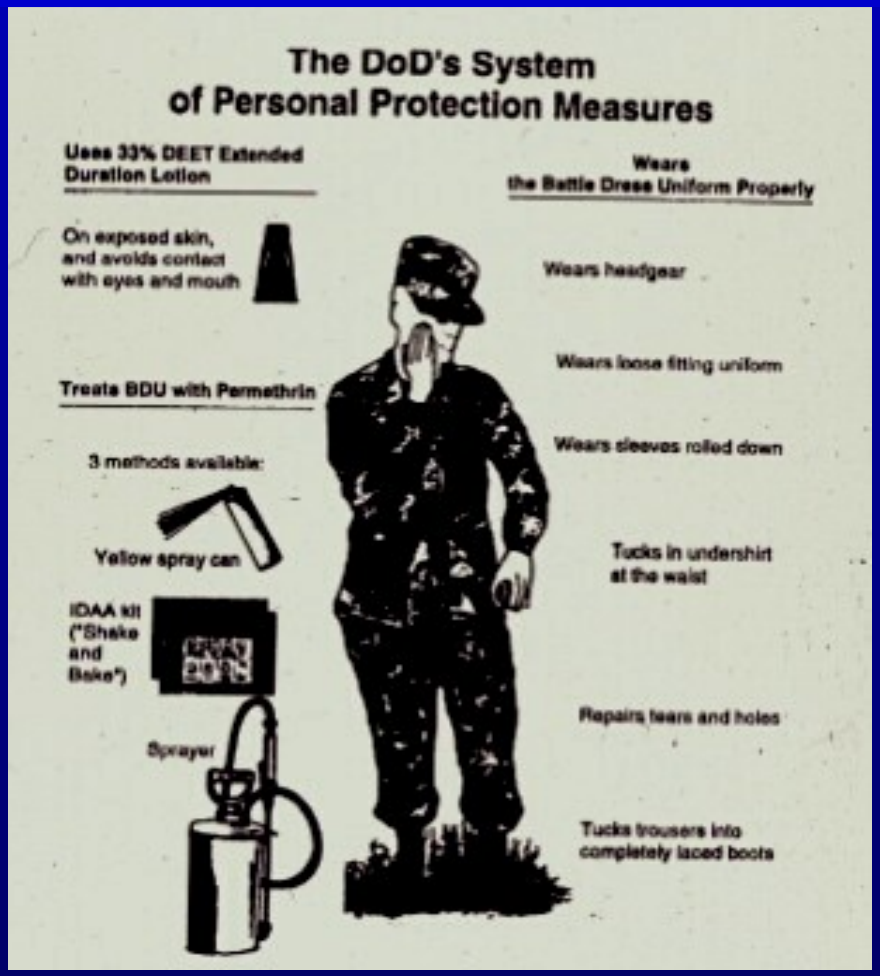
- Sore is commonly called the “Baghdad boil”
- No OIF CL has disseminated to visceral
- All Leishmaniasis is highly preventable!

- "In some cities infection is so common and so inevitable that normal children are expected to have the disease soon after they begin playing outdoors, and visitors seldom escape a sore as a souvenir. Since one attack gives immunity, Oriental sores appearing on an adult person in Baghdad brands him as a new arrival..."

  –Introduction to Parasitology, 1944

Prevention

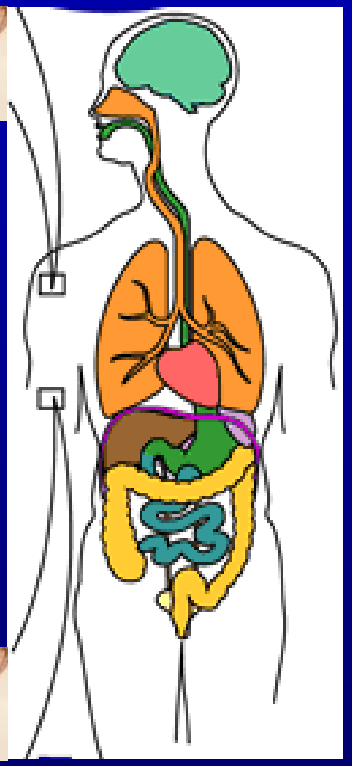
- **Suppress the reservoir**: dogs, rats, gerbils, other small mammals and rodents
- **Suppress the vector**: Sandfly
  - Critical to preventing disease in stationary troop populations
- **Prevent sandfly bites**: Personal Protective Measures
  - Most important at night
  - Sleeves down
  - Insect repellent w/ DEET
  - Permethrin treated uniforms
  - Permethrin treated bed nets


The DoD's System
of Personal Protection Measures
Uses 33% DEET Extended Duration Lotion
On exposed skin, and avoids contact with eyes and mouth
Treats BDU with Permethrin
3 methods available:
Yellow spray can
IDAA kit ("Shake and Bake")
Sprayer
Wears the Battle Dress Uniform Properly
Wears headgear
Wears loose fitting uniform
Wears sleeves rolled down
Tucks in undershirt at the waist
Repairs tears and holes
Tucks trousers into completely laced boots

Life Cycle

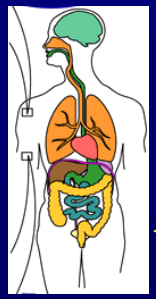
1- Sandfly bites animal and ingests blood infected with *Leishmania*

2- Sandfly bites human and injects *Leishmania* into skin



3- Another sandfly bites human and ingests blood infected with *Leishmania*

4- Cycle continues when sandfly bites another human or animal reservoir



Cutaneous Leishmaniasis (CL)

- Most common form
- Characterized by one or more sores, papules or nodules
- Sores can change in size and appearance over time
- Often described as volcano-like with a raised edge and central crater
- Sores are usually painless but can become painful if secondarily infected
- Swollen lymph nodes may be present near the sores (e.g. axilla/epitrochlear if sores are on the arm or hand)

Cutaneous Leishmaniasis (CL)

- Most sores develop within a few weeks of the sandfly bite, however they can appear up to months later
- Sores of CL heal spontaneously in 2-12 months
- Sores can leave significant scars and be disfiguring if they occur on the face

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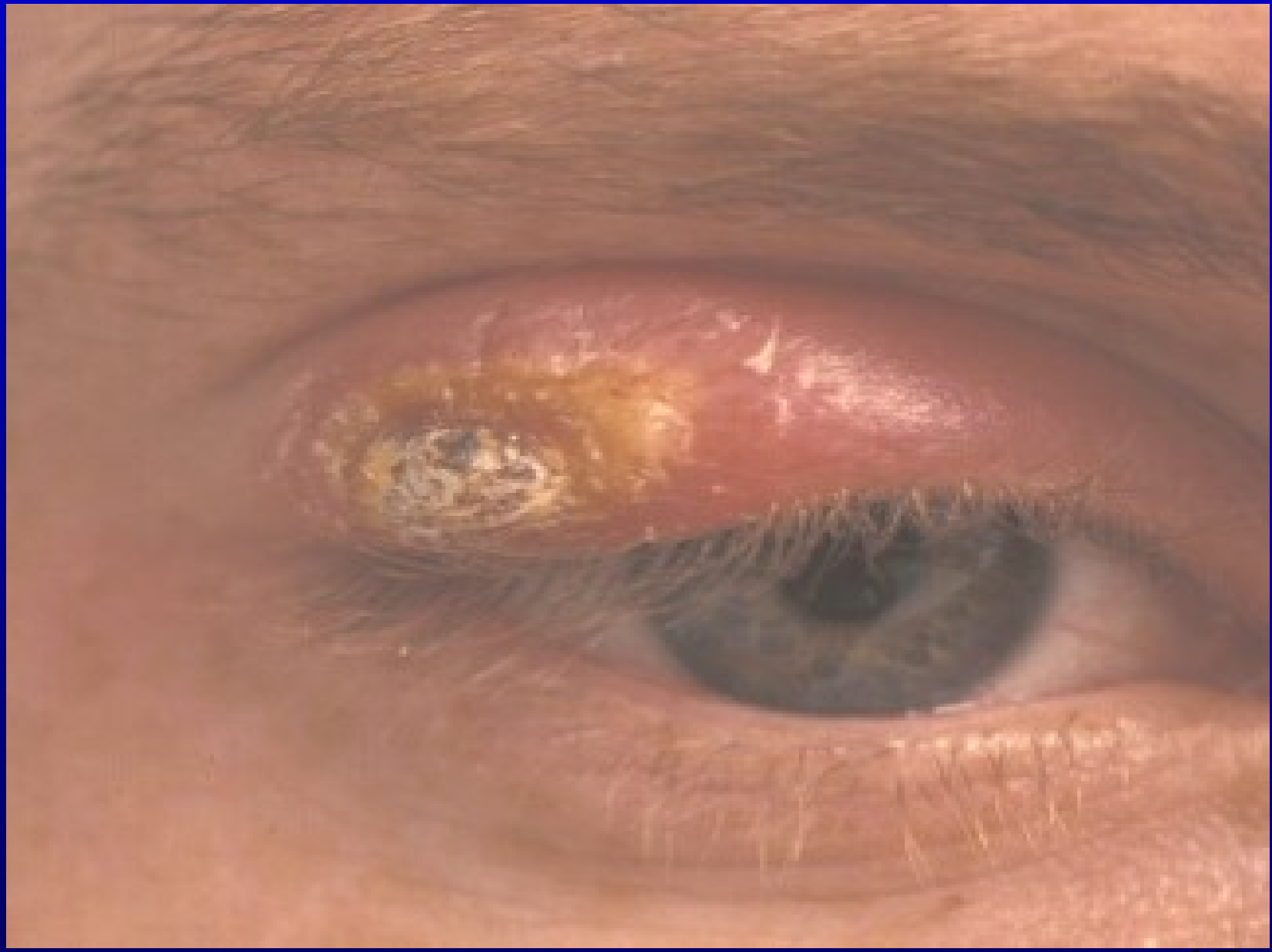


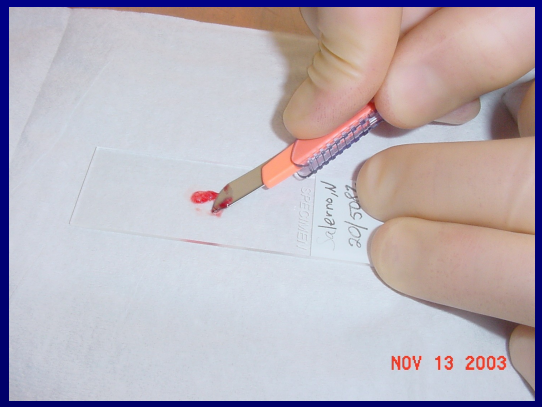
Cutaneous Leishmaniasis (CL) Diagnosis

- Heightened awareness of individuals, small unit leaders, and medical personnel is critical
- Nonhealing sores (4-6 weeks) after a trial of oral antibiotics should be referred for evaluation
- Soldiers/deactivated personnel should tell their provider that they were in SW or Central Asia

Cutaneous Leishmaniasis (CL) Diagnostic Testing

- Dermal scraping and smear is recommended if the presumptive diagnosis is CL, and should augmented by submission of tissue for Polymerase Chain Reaction (PCR) -see attached info sheet & accompanying video.

Diagnosis – Dermal Scraping & PCR Minimize blood & overlying keratin/crusted debris!



Cutaneous Leishmaniasis (CL) Diagnostic Testing

- Punch biopsy with touch prep may be preferred for atypical lesions & if other disease processes are being considered (see attached info sheet).

Cutaneous Leishmaniasis (CL) Diagnostic Testing

- Army pathologists interpret scrapings & any biopsies/touch preps via Giemsa stains.

- Forward slides & PCR specimens to AFIP. (See AFIP web site re: CL & attached Army Pathology Consultant info paper). AFIP maintains registry.

Leishmania Diagnostic Laboratory (LDL) at WRAIR

- MTFs and the AFIP maintain a close working relationship with the LDL
- Tissue culture & PCR interpretation capability
- POC LTC Pete Weina, CPT Eric Fleming, Mr. John Tally
- DSN 285-9956/9206/9487 FAX 285-7360, com 301-319-

Cutaneous Leishmaniasis (CL) Diagnosis

- If a patient has lesions that were historically consistent with CL, but are now almost completely healed or re-epithelialized, no diagnostic testing may be needed at all.

- Document such cases for tracking purposes as "clinically presumptive CL"

Cutaneous Leishmaniasis (CL) Treatment

- Early recognition, testing, & treatment is critical for facial involvement, other exposed sites, & for those with rapidly enlarging or multiplying lesions

Cutaneous Leishmaniasis (CL) Treatment Options

- No Rx (self-resolving process)
- Paromomycin topical (not yet FDA approved)
- Cryotherapy (localized freezing)
- ThermoMed (localized heat)
- Fluconazole -oral (off-label use, for *L. major* only)
- Pentostam (sodium stibogluconate) – IV for 10-20 days

Cutaneous Leishmaniasis (CL) No Treatment (watchful waiting)

- For lesions that are in the late resolution phase, with near complete re-epithelialization

- For small (<nickel-sized/2cm) and few (<5) lesions, especially on concealed locations of the trunk & proximal extremities, a patient can elect no treatment after discussing other options with the provider

Cutaneous Leishmaniasis (CL) Paromomycin Topical Ointment Rx

- Not currently FDA approved
- Used extensively in other countries
- For ulcerative lesions
- AMEDD is studying this option

Cutaneous Leishmaniasis (CL) Cryotherapy Treatment

- Cryotherapy (localized freezing) - liquid nitrogen
- Only for those experienced in this technique
- 30 second freeze, 60 second thaw, repeat once
- Extreme caution/avoid in darker-skinned patients

Cutaneous Leishmaniasis (CL) ThermoMed (localized heat Rx)

- Battery-operated radiofrequency device
- Generous local anesthesia - 2% lidocaine
- 30 second burst to sized grids
- Site Rx with gentamicin or bacitracin oint. and non-stick dressing
- Requires training by those experienced with device (see accompanying video)

Cutaneous Leishmaniasis (CL) Fluconazole Treatment

- Not FDA approved for CL

- *L. major* only!

- Use is off label per NEJM 2002;346:891

- Response might be slower than other treatments

Cutaneous Leishmaniasis (CL)

Pentostam (antimonial sodium stibogluconate) Rx

- Given under a special FDA approved protocol ONLY at Walter Reed Army Medical Center (WRAMC) & Brooke Army Medical Center (BAMC) ID services in the U.S.

- WRAMC- DSN 662-1663/6740/8684/8691/8696, com 202-782-
- BAMC- DSN 429-1286/5554/0848, com 210-429-

- 10-20 days of IV therapy

- Consider for those with active facial, ear, hand, feet lesions, large (>3cm) or multiple (>5) lesions, over joints of hands,feet, elbows, or those who have failed other modalities (after 60 days)

Cutaneous Leishmaniasis (CL) Practical Considerations

- Leishmaniasis - lifelong ban as blood donor
- CL by *L. major* is not contagious (possible exception: very rare genital lesions - use condom)
- Relapse may occur in healed sites 2-3 months after Rx, requiring re-evaluation

Cutaneous Leishmaniasis (CL) On-line Resources

- www.pdhealth.mil
- www.afip.org/hot-topics.html
- Army Derm AKO website

Cutaneous Leishmaniasis (CL) Regional POC - Clinical Questions

ERMC	MAJ Greg Dye
NARMC	LTC Glenn Wortmann
SERMC	MAJ Rob Willard
GPRMC	COL David Dooley
WRMC	COL Joe Morris
PRMC	COL Susan Fraser

Email via AMEDD Outlook

Cutaneous Leismaniasis (CL) Pentostam Questions/Referrals

- East of Mississippi:
- WRAMC DSN 662-1663/6740/8684/8691/8696, com 202-782-

- West of Mississippi:
- BAMC DSN 429-1286/5554/0848, com 210-429

Cutaneous Leishmaniasis (CL) Preventive Medicine/Reporting POC

ERMC	COL Kent Bradley
NARMC	COL Dallas Hack
SERMC	LTC Edward Boland
GPRMC	COL Forest Oliverson
WRMC	COL Evelyn Bararaza
PRMC	COL Glenn Wasserman

Email via AMEDD Outlook

Visceral Leishmaniasis (VL)

- 12 cases in ODS from *L. tropica*
- 2 cases thus far from OEF/ 1 from OIF
- Fever, malaise, hepatospenomegaly, pancytopenia, hypergammaglobulinemia
- Can cause serious illness – refer quickly!
- Leishmaniasis is highly preventable!
- Contact Army Infectious Disease specialist